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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/508,512	03/24/2000	ROBERT ARTHUR HENRY EDWARDS	REF/EDWARDS/	3037

7590

07/31/2003

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EXAMINER

CROSS, LATOYA I

ART UNIT

PAPER NUMBER

1743

DATE MAILED: 07/31/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/508,512

Applicant(s)

EDWARDS ET AL.

Examiner

LaToya I. Cross

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-15, 17-19, 22-26, 28-33 and 38 is/are rejected.
- 7) ☒ Claim(s) 5, 16, 20, 21, 27, 34-37 and 39-41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to Applicants' amendment filed on May 5, 2003 and entered as Paper No. 9. Claims 1-41 are pending.

Withdrawal of Rejections from Previous Office Action

- The rejection of claim 37 under 35 USC 112, second paragraph is withdrawn in view of Applicants' amendment to correct the antecedent basis problem.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 4, 7, 8, 23, 24, 29, 30, 32, 33 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,132,539 to Kwasnick et al (hereinafter Kwasnick et al '539).

Kwasnick et al '539 teach a radiation imager comprising a scintillator mated with a photodetector array. The scintillator may be cesium iodide or alternatively any other known scintillating material (col. 3, lines 44-46). A desiccant, such as silica gel, is formed around the scintillation material to provide moisture protection for the scintillator (col. 5, lines 23-27). A photodetector array is optically coupled adjacent to the scintillator and further connected to a processing circuit, which processes electrical signals for use in display and analysis equipment (col. 2, line 68 – col. 3, line 3). The photodetector array is a plurality of photodiodes (col. 3, lines 4-15). It is noted that Applicant's claims recite "suitable for selective response to

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tritiated water vapor and other hydrophilic tritiated species in a gas", however, this is mere intended use. In claims directed to an apparatus, the intended use is given no patentable weight.

Therefore, for the reasons set forth above, Applicants' claimed invention is deemed to be anticipated, within the meaning of 35 USC 102(b) in view of the teaching of Kwasnick et al '539.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 4, 7-12, 23, 24, 29, 30, 32, 33 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kwasnick et al '539 in view of US Patent 4,562,158 to Schellenberg (hereinafter Schellenberg '158).

The disclosure of Kwasnick et al '539 is described above.

Kwasnick et al '539 fail to teach 1) pretreating the scintillation material with a detergent (claims 9, 10) and 2) the use of the scintillation material to monitor the activity of tritiated water vapor (claims 11, 12).

Schellenberg '158 teaches that scintillation elements can be used in counting isotopes such as tritium. Schellenberg '158 further teaches that including a small amount of detergent, such as Triton X sulfonate, improves the ability of the scintillator to receive water or aqueous

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solutions. It would have been obvious to one of ordinary skill in the art to incorporate a detergent material into the scintillators of Kwasnick et al '539 to improve their wettability.

Therefore, for the reasons set forth above, Applicant's claimed invention is deemed to be obvious, within the meaning of 35 USC 103 in view of the teachings of Kwasnick et al '539 and Schellenberg '158.

5. Claims 2, 13-15, 17-19, 22, 23, 25, 26, 28, 30-33 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kwasnick et al '539 in view of Schellenberg '158 as applied to claims 1, 3, 4, 7-12, 23, 24, 29, 30, 32, 33 and 38 above, and further in view of Great Britain publication 1,092,797 to Atomic Energy (hereinafter Atomic Energy '797).

Neither Kwasnick et al '539 nor Schellenberg '158 teach 1) the particular scintillating material recited in claim 2; 2) an inlet/outlet for gas, and 3) a measuring means recited in claims 17, 18, 19, 30, 31 and 31.

Regarding the particular scintillating material being used, Atomic Energy '797 discloses detection of tritium in air and vapors. The reference teaches use of a plastic phosphor scintillation material for good light collection efficiency. See page 3, lines 1-5 and 52-60. With respect to the inlet/outlet ports Atomic Energy '797 teaches a preferred embodiment comprising a detector cell having inlet and outlet parts, as well as optically clear windows (page 2, lines 68-96). This allows efficient detection of tritium by allowing pure gases to flow inward and outward. For measuring, Atomic Energy '797 teaches using photomultiplier tubes that are fed through amplifiers, which in turn feed rate meter circuits and recording meters.

It would have been obvious to one of ordinary skill in the art to use the teachings of Atomic Energy '797 to incorporate inlet and outlet parts, as well as measuring means into the

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device of Schelenberg '158 to provide a more efficient scintillating element for determining tritium.

Allowable Subject Matter

Claims 5, 16, 20, 21, 27, 34-37, and 39-41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record do not teach or suggest to the particular hygroscopic materials of claim 5 in a scintillating element as claimed. The prior art also fails to teach or reasonably suggest a time output measuring means or a non-discriminatory tritium monitor in combination with the scintillating element. Regarding claims 34-37 and 39, no second sealed radiation monitors are taught or suggested by the prior art of record. While publications such as EP 1118878, EP 1118879 and EP 1115011 may teach scintillating elements similar to those applicants claim, these references are not available as prior art due to their publication dates.

Response to Arguments

6. Applicant's arguments filed May 5, 2003 have been fully considered but they are not persuasive. With respect to the rejection over Kwasnick et al, Applicants argue that 1) the desiccant of Kwasnick et al is not the same as the hygroscopic material instantly claimed, 2) the arrangement of scintillator of Kwasnick et al could never function as a monitor for tritiated water vapor and 3) Kwasnick's desiccant absorbs water irreversibly, whereas the hygroscopic layer of the instant invention continually absorbs and desorbs.

With respect to the desiccant of Kwasnick not being the same as that claimed by Applicants, the Examiner disagrees. First, the specification fails to provide a description of the hygroscopic material, other than naming preferred embodiments. The dictionary definition of

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hygroscopic is "a substance that absorbs water from the atmosphere; See desiccant or deliquescence." The dictionary definition of desiccant is a "substance that absorbs water and is used to remove moisture". The dictionary definition of deliquescence is "absorption of atmospheric moisture". Thus, the Examiner does not agree that desiccant, hygroscopic and deliquescence are distinct in this situation.

With respect to the functioning of the scintillator, the use of the scintillator is not given patentable weight in the apparatus claims. Furthermore, because the apparatus of Kwasnick et al is the same as that claimed, the ability to function in monitoring tritiated water would be inherent. With respect to the method claims where monitoring tritiated water is claimed, Schellenberg is used to teach that scintillators may be used to monitor tritiated water. Applicants' reasoning for stating that the scintillator would not be useful in monitoring tritiated water is that the desiccant of Kwasnick et al absorbs water irreversibly. The absorption of the hygroscopic material is not a limitation of the claimed invention. Thus, it is improper for Applicants to argue such.

It is suggested that Applicants better define the hygroscopic material in the claims to overcome the rejection over Kwasnick. Any limitations should be fully supported by the original specification.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until

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after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaToya I. Cross whose telephone number is 703-305-7360. The examiner can normally be reached on Monday-Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 703-308-4037. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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July 28, 2003


Jill Warden
Supervisory Patent Examiner
Technology Center 1700